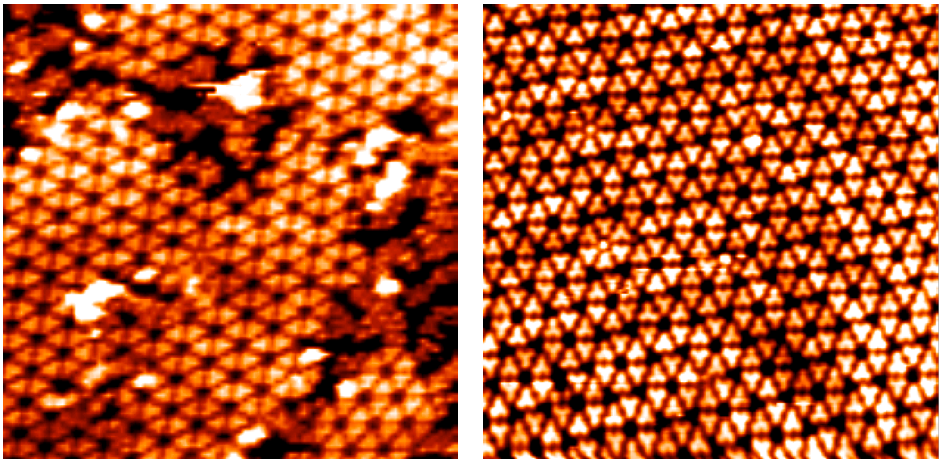
Supporting Information

Polymorphism and chiral expression in two-dimensional subphthalocyanine crystals on Au(111)

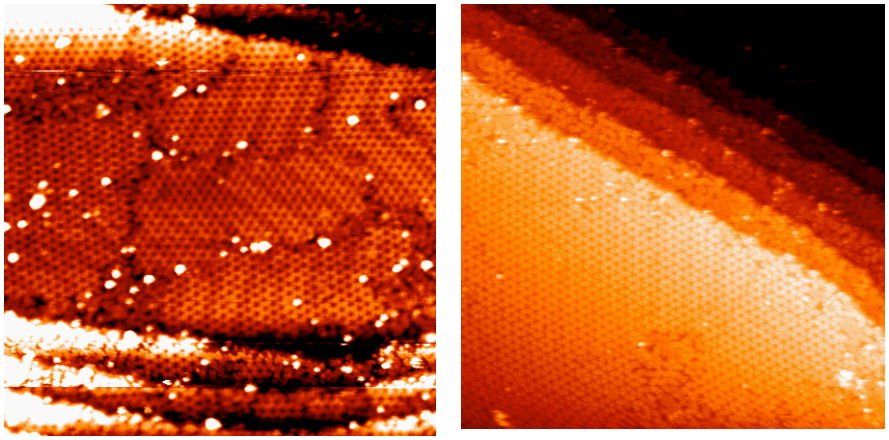
Nan Jiang,[a] Yeliang Wang,[a] Qi Liu,[a] Yuyang Zhang,[a] Zhitao Deng, Karl-Heinz Ernst*[b] and Hong-Jun Gao*[a]

[a] *Beijing National Laboratory of Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing 100190, PR China.*
[b] *Nanoscale Materials Science Laboratory, Empa - Swiss Federal Laboratories for Materials Research (EMPA), Überlandstrasse 129, CH-8600 Dübendorf, Switzerland.*
E-mail: : hjgao@iphy.ac.cn; karl-heinz.ernst@empa.ch

A: Long-range STM images of diamond and intermediate phase



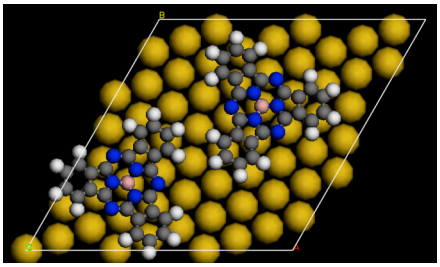
SFig. 1 STM images of the diamond structure (left, 32 nm x 32 nm, V= -2 V, I= 0.1 nA) and "intermediate" structure (right, 32 nm x 32 nm, V= -2 V, I= 0.1 nA) acquired from the same sample, but at different position on the surface.

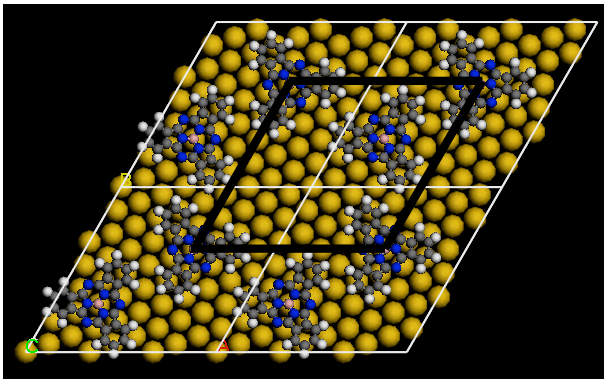


SFig. 2 STM images (100 nm x 100 nm, U = 2 V, I = 100 pA) of the diamond phase (left) and the intermediate phase (right) acquired from the same sample, but at different position on the surface. The diamond phase has many domains on a single terrace, while in the intermediate phase a whole terrace is covered by a single domain.

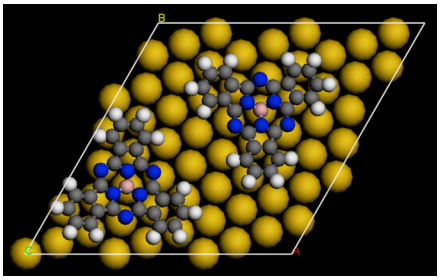
B: Unit cells of structures

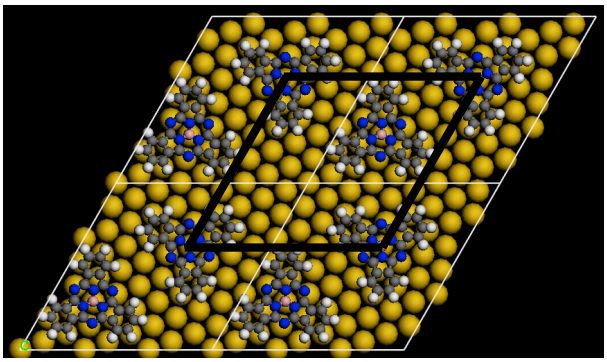
1. Honeycomb structure



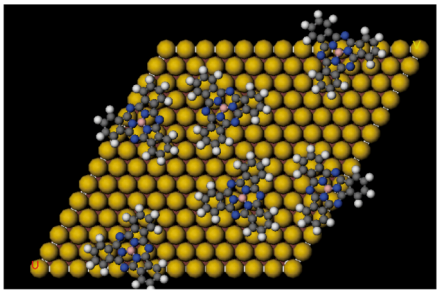


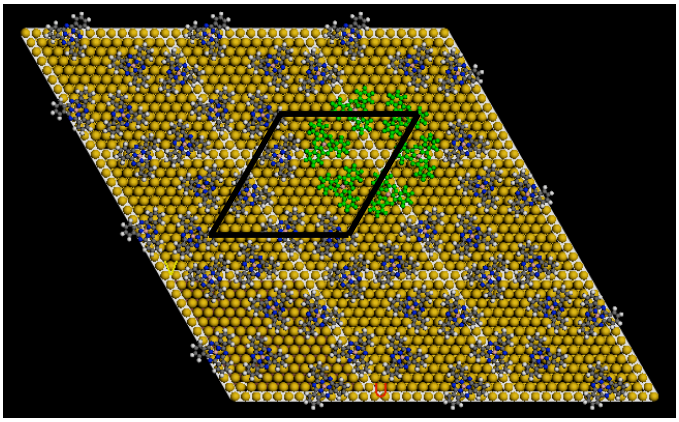
2. Diamond structure





3. Intermediate structure





4. Hexagonal closed-packed (hcp) structure